Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A connector module comprising:

at least one jack adapted for coupling to a link; and

circuitry coupled to the jack, the circuitry configured to perform Power-over-Ethernet (PoE) operations by supplying power through the jack.

2. (Original) The connector module of claim 1 being an Ethernet jack module with embedded PoE functionality and the jack being an Ethernet jack.

3. (Original) The connector module of claim 1, wherein the Ethernet jack is either an RJ-45 jack or an RJ-21 jack.

4. (Original) The connector module of claim 1, wherein the circuitry comprises:

a FET switch;

an AC disconnect component coupled to the FET switch;

magnetics coupled to the AC disconnect component; and

a PoE circuit coupled to the FET switch, the PoE circuit to vary the amount of power supplied over the jack by adjusting current supplied to the FET switch.

5. (Original) The connector module of claim 4, wherein the PoE circuit is coupled to the AC disconnect component in order to discontinue power supplied to the jack when the link is disconnected from the jack.

6. (Original) The connector module of claim 4, wherein the AC disconnect is coupled to (i) center taps of magnetics and (ii) a power supply to receive a direct current (DC) supply voltage therefrom.

7. (Original) The connector module of claim 4, wherein the circuitry further comprises one or more light emitting diodes being in a first state when the link is disconnected from the jack and in a second state when the link is coupled to the jack.

8. (Original) The connector module of claim 5, wherein the one or more light emitting diodes of the circuitry being in a third state upon detecting a fault in an electrical connection established by the link when the link is coupled to the jack.

9. (Original) The connector module of claim 4, wherein the one or more light emitting diodes of the circuitry being in a blinking state during communications between the connector module and a peripheral device and in a no light state when the communications have stopped.

10. (Original) The connector module of claim 4, wherein the magnetics comprises a pair of transformers each having a center tap coupled to the AC disconnect.

11. (Original) The connector module of claim 1 being implemented on a circuit board within a switching device including a housing substantially enclosing the connector module with at least the jack accessible for coupling to the link.

12. (Original) The connector module of claim 2 being adapted within a switching device to receive direct current (DC) voltage from an externally located power supply and, under control of the circuitry embedded within the connector module, to transmit power to IEEE 802.3af compliant powered device coupled to the at least one Ethernet jack of the connector module.

13. (Original) The connector module of claim 11, wherein the circuitry further comprises at least one opto-coupler to isolate a common voltage and digital ground for one or more control signals supported by the circuitry.

14. (Original) The connector module of claim 1, wherein the circuitry comprises

a plurality of PoE functional blocks each including a light emitting diode, an Ethernet jack and magnetics; and

at least one shift register coupled to the light emitting diodes for each of the PoE functional blocks, the at least one shift register to drive the light emitting diodes.

15. (Original) A connector module comprising:

a plurality of Ethernet jacks each adapted for coupling to a link; and

circuitry, coupled to the plurality of Ethernet jacks, to perform Power-over-Ethernet (PoE) operations by supplying power through each of the plurality of Ethernet jacks, the circuitry comprises magnetics and a PoE circuit, the PoE circuit to vary the amount of power supplied over any of the plurality of Ethernet jacks.

16. (Original) The connector module of claim 15, wherein the circuitry further comprises a plurality of light emitting diodes each corresponding to one of the plurality of Ethernet jacks, each light emitting diode operating in a first state when the link is disconnected from its corresponding Ethernet jack and in a second state when the link is coupled to its corresponding Ethernet jack.

17. (Original) The connector module of claim 15, wherein the circuitry further comprises an AC disconnect component coupled to the PoE circuit and the magnetics, the AC disconnect to discontinue a supply of power to one of the plurality of Ethernet jacks when the jack is decoupled from a link and to provide an indication that may alter a state of a light emitting diode corresponding to the one of the plurality of Ethernet jacks.

18. (Original) The connector module of claim 15, wherein the PoE circuit of the circuitry is coupled to the magnetics.

19. (Original) A Power-Over-Ethernet (PoE) circuit adapted for controlling power supplied over a plurality of Ethernet jacks, the PoE circuit comprising:

a plurality of voltage sensing contacts each to detect whether a powered device is coupled to an Ethernet jack of the plurality of Ethernet jacks corresponding to the voltage sensing contact and to prioritize the plurality of Ethernet jacks;

a first contact to receive a predetermined direct current (DC) voltage from a power supply;

a first serial interface to receive control information for managing power transmissions by the PoE circuit; and

a second serial interface adapted for coupling to a first serial interface of a neighboring PoE circuit.

20. (Original) The PoE circuit of claim 19, further comprising a second contact to receive a signal from an alternating current (AC) disconnect.

21. (Original) The PoE circuit of claim 19, further comprising a plurality of contacts each adapted for coupling to one of a plurality of switches for controlling an amount of current flowing into a powered device coupled to one of the plurality of Ethernet jacks, an interruption of current flow into the powered device causes no power to be transferred to the powered device from the one of the plurality of Ethernet jacks.

22. (Original) The PoE circuit of claim 19, further comprising a second contact to receive a logic signal from the power supply to indicate whether the power supply is working properly.

23. (Original) The PoE circuit of claim 19, further comprising a second contact that, when placed in a predetermined logic state, indicates to the neighboring PoE circuit that the power supply is working properly.

24. (Original) A method comprising:

receiving an isolated supply voltage by a connector module that comprises a Power-over-Ethernet (PoE) circuit and a plurality of jacks;

internally regulating an isolated internal voltage being less than the isolated supply voltage within the connector module;

performing PoE operations within the connector module to manage power transmissions by the PoE circuit; and

supplying power through at least one of the plurality of jacks to a neighboring connector module.

25. (Previously Presented) A connector module comprising:

a housing including at least one jack formed in the housing; and

power-over-Ethernet (PoE) circuitry contained within the housing and directly coupled to the at least one jack.

26. (Previously Presented) The connector module of claim 25 being an Ethernet jack module with the PoE circuitry mounted on a circuit board.

27. (Previously Presented) The connector module of claim 25, wherein the housing further includes an output to supply power to a first connector module neighboring the connector module.

28. (Previously Presented) The connector module of claim 27, wherein the housing further includes an input to receive power from a second connector module neighboring the connector module so as to form a cascading connection between the first neighboring connector module and the second neighboring connector module.

29. (Previously Presented) The connector module of claim 25, wherein the PoE circuitry includes (i) a switch and (ii) a PoE circuit adapted to vary the amount of power supplied over the at least one jack by adjusting current supplied to the switch.

30. (Previously Presented) The connector module of claim 29, wherein the PoE circuitry further comprises an alternating current (AC) disconnect component coupled to the

switch, the AC disconnect component to disconnect power supplied to the at least one jack when a link is disconnected from the at least one jack.

31. (Previously Presented) The connector module of claim 30, wherein the PoE circuitry further comprises magnetics including a pair of transformers each having a center tap coupled to the AC disconnect component.

32. (Previously Presented) The connector module of claim 25, wherein the housing comprises (i) a first input adapted to receive power from a first neighboring connector module and (ii) a first output adapted to provide power to a second neighboring connector module.

33. (Previously Presented) The connector module of claim 32, wherein the housing further comprises a cascade serial communication interface adapted for coupling to a serial communication interface of the first neighboring connector module.

34. (Previously Presented) The connector module of claim 25, wherein the housing further comprises a connector enabling a connection directly to an isolated voltage source via a mating connector/cable assembly.